



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
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ATLANTA, GEORGIA 30303-8960

December 7, 2010

Colonel Alfred A. Pantano, Jr., USA
District Engineer
U.S. Army Corps of Engineers, Jacksonville
ATTN:
Daniel R. Haubner, P.E., PMP and Paul DeMarco, M.S.
Project Managers
701 San Marco Blvd
Jacksonville, FL 32207

SUBJ: Martin County, Florida Hurricane and Storm Damage Reduction Project,
Beach Nourishment Project for Construction of a Protective and Recreational
Beach Along 4 Miles of Shorefront, Hutchinson Island, Martin County, FL
Draft Supplemental Environmental Impact Statement (September 2010)
CEQ Number: 20100436; ERP Number: COE-E30033-FL

Dear Colonel Pantano:

Pursuant to Section 102(2) (c) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, the U.S. Environmental Protection Agency (EPA) has reviewed the subject Jacksonville District, U.S. Army Corps of Engineers (USACE) Draft Supplemental Environmental Impact Statement (DSEIS) that we understand was developed to evaluate alternatives for the Martin County Beach Erosion Control Project. This DSEIS was developed with the USACE as Lead Agency and the Minerals Management Service (now known as the Bureau of Ocean Energy Management, Regulation and Enforcement) as the Cooperating Agency. This proposed beach renourishment effort features construction of a protective and recreational beach along 4 miles of shorefront southward from the St. Lucie County line to near the limit of Stuart Public Beach Park (stations R-1 to R-25). A project cooperation agreement (PCA) was reportedly executed between the Department of the Army and the non-federal sponsor on August 3, 1995.

The federal project is authorized for 50 years from the date of initial construction on December 13, 1995, and the period of federal participation (cost-sharing) for this project expires in 2046. The total project fill requirement for the remainder of the 50-year life of the Martin County Beach Erosion Control Project is estimated to be between 2.4 and 4.0 mcy, and the next renourishment is scheduled for 2012 and will involve the placement of approximately 787,800 cubic yards (cy) of material along the 4-mile project

area. As the previously approved borrow area has been fully utilized, three (3) sand shoals within portions of the St. Lucie Shoal complex located approximately 3 to 7 miles offshore Martin and St. Lucie Counties are proposed as a potential new sand source. The DSEIS reports that is anticipated that these areas will yield enough sand to last the life of the federally authorized project.

Authorized Project Final Environmental Impact Statement (FEIS) – A Congressional Resolution was reportedly adopted by Congress on May 18, 1973, requesting that the USACE investigate shore protection alternatives for Martin County, Florida. In June 1986, a Feasibility Report with FEIS was published and reviewed by EPA. The project was then authorized by the Water Resource Development Act of 1990 with a plan that consisted of restoring 4 miles of shorefront southward from the St. Lucie County line to near the limit of Stuart Public Park (stations R-1 to R-25). EPA understands that the plan included restoring the primary dune to an elevation of 12.5 feet above msl and a top width of 20 feet. In order to maintain the protective beach, advanced nourishment was included in the initial beach fill. The 1994 GDM calculated that the optimal renourishment level at “589,600 cy every 11 years.”

Prior to construction, a General Design Memorandum (GDM) with Environmental Assessment (EA) dated June 1994 was prepared. EPA understands that “discretionary authority” was used to reduce the federal project length to 3.75 miles (stations R-1 to R-23) to avoid adverse environmental impacts to nearshore hardbottom habitat from infilling. The project berm was also tapered between stations R-23 to R-25 to further reduce adverse hardbottom impacts. It was later determined that there were no potential hardbottom impacts in R-23 through R-25, so this portion of the project was constructed in 2002 at 100% non-federal cost. However, USACE may seek to re-incorporate the southern 2,000 feet into the Federal Construction portion of the project at some yet-to-be-determined date. For that reason, the SEIS appropriately evaluates the impacts from the entire 4-mile project reach between R-1 to R-25.

Beach Fill Alternative Designs – EPA understands that USACE has found that beach nourishment represents the optimal solution to the erosion problems within the framework of federal guidelines. Beach fill alternative designs have thus been formulated to provide various levels of protection to development, prevention of loss of land, and recreational benefits. Since USACE believes that the beach nourishment alternative (S-3) offers a better course of action and opportunities to address the National Economic Development (NED) objective, EPA understands that it was carried forward for more detailed evaluation. The beach nourishment alternative (S-3) includes two possible sources of beach-quality sand: offshore borrow areas located within the St. Lucie Shoal and upland sand sources. For further refinement of these options, the beach nourishment structural measure (S-3) is separated into two sub-measures: Beach Nourishment Using an Offshore Sand Source (S-3A) and Beach Nourishment Using an Upland Sand Source (S-3B).

EPA understands that a hopper dredge will be used to excavate and transport the material just offshore of the project area, where it then will be transferred hydraulically to

shore via a pipeline for placement with earth-moving equipment. The SEIS reports that the 2012 cost of placing 787,800 cy of material from the proposed offshore borrow area is estimated at \$9,700,297 or \$9.09 per cubic yard. This cost estimate includes mobilization and demobilization, dredging and beach fill, tilling, construction/vibration controls and monitoring, endangered species observers, sea turtle trawling, and sea turtle relocation trawling. Pre- and post construction monitoring will be paid for by the local sponsor as part of its cost share for the project and has not been factored into this cost estimate.

Background and Preferred Alternative – EPA notes the DSEIS appropriately considers both nonstructural (NS) and structural (S) measures as part of the NEPA process. The preferred alternative, S-3A, uses an offshore sand source. EPA notes that the DSEIS appropriately addresses preferred alternative S-3A in light of federal and local planning objectives, anticipated beach erosion losses, and considers the direct and secondary impacts to nearshore hardbottom located within the limits of the project. EPA concurs with the USACE objective to create nearshore artificial reefs, which we understand includes at least 6.0 acres of nearshore artificial reefs at three sites. EPA supports intensive biological, sedimentation, and turbidity monitoring during all phases of project construction.

DSEIS Objectives - EPA agrees with the DSEIS that, if the proposed Martin County Beach Erosion Control Project goes forward, it should be constructed by USACE in a manner that fully protects the environment from unacceptable impacts. EPA concurs with the following objectives of the DSEIS:

- Reducing expected storm damages through beach nourishment and other project alternatives;
- Re-establishing beaches as suitable recreational areas and maintaining local commerce associated with beach recreation in Martin County;
- Maintaining suitable beach habitat for nesting sea turtles, invertebrate species, and shorebirds;
- Consideration of possible adverse impacts to the beach, nearshore hardbottom resources, and offshore sand borrow area resources and adjacent habitat;
- Consideration of long-term and cumulative effects on protected species, water quality, essential fish habitat (EFH), fish and wildlife resources, benthic communities, sediment transport, wave modification, cultural and socioeconomic resources, and aesthetics and recreation.

Minimization and Avoidance of Adverse Impacts - EPA concurs with the DSEIS that measures should be taken to avoid, minimize, and compensate for adverse impacts associated with obtaining offshore source material and nourishing 4 miles of shorefront. To offset direct and secondary impacts to nearshore hardbottom located within the limits of the project (R-1 to R-25), EPA understands that 6.0 acres of nearshore artificial reef has been created at three separate sites located approximately

900 feet offshore monuments R-12, R-18, and R-20. EPA has the following specific comments regarding minimization and avoidance of adverse impacts:

- 1) EPA recommends that a long term biological monitoring plan should be developed and implemented to assess direct, secondary, and long-term effects to nearshore hardbottom habitat associated with the proposed project.
- 2) EPA recommends that a sedimentation and turbidity monitoring plan should be established to assess, avoid, and/or minimize impacts to reef communities adjacent to the proposed borrow areas during project construction.
- 3) EPA recommends that all National Marine Fisheries Service (NMFS) and the Florida Fish and Wildlife Conservation Commission (FFWCC) comments regarding DSEIS be fully addressed and resolved prior to issuance of the Final Supplemental EIS (FSEIS), or at least prior to project construction.
- 4) An FDEP Joint Coastal Permit and Sovereign Submerged Lands Authorization is required before project construction. EPA understands that a Joint Coastal Permit Application was prepared and submitted to FDEP in April 2009. EPA recommends that the specific conditions that have been developed by the Florida Department of Environmental Protection (FDEP) permit be fully implemented to foster the minimization and avoidance of all environmental impacts.

Alternatives Considered – EPA previously reviewed a range of both nonstructural and structural measures that were evaluated in the 1994 USACE General Design Memorandum (GDM) that were developed to reduce beach, land, and property losses resulting from erosion, storms, and hurricanes along Hutchinson Island. EPA supports the consideration a sufficient number and type/range of alternatives for storm damage reduction and beach nourishment projects, which we understand in this case consisted of the no-action plan, seven (7) nonstructural solutions, and eight (8) structural solutions. These alternatives were appropriately evaluated for the potential to contribute to the project objectives and consistency with project constraints. EPA understands that several alternatives “were not evaluated further than the initial screening due to a combination of economic viability, effectiveness, and/or political or social acceptance.” The USACE screening process “eliminated those alternatives that do not respond to the needs of the problem area or to the overall planning objectives from further consideration and detailed evaluation.”

Preferred Alternative – The USACE believes that the preferred alternative, S-3A Beach Nourishment Using an Offshore Sand Source, addresses the federal and local planning objectives, anticipates beach erosion losses, and considers the needs of the study area. The recommended plan “maximizes net NED benefits, meets the federal objectives of restoring a protective beach with subsequent periodic renourishment to provide 40-year storm protection, considers recreational and environmental needs of the study area, and minimizes erosion losses over the life of the project.” Initial construction of the beach fill area to the specified dimensions was first completed in 1996. The design served as a buffer against wave attack, but required renourishments at regular intervals. Dimensions of the original beach fill were designed to protect against the 40-year storm

event. The current project area includes 4 miles of shoreline from the St. Lucie County line to near the southern limit of Stuart Public Beach Park. Plan S-3A includes restoration of the primary dune to an elevation of 12.5 feet above mean sea level (msl) and a top width of 20 feet. A 35-foot-wide protective berm would be provided at an elevation of 8 feet above msl, with a vertical to horizontal foreshore slope of 1:8.5 feet (1V:8.5H) to mean low water (mlw), and a vertical to horizontal slope of 1:20 feet to the existing bottom (1V:20H). EPA has the following specific comments regarding the Preferred Alternative:

- 1) Dimensions of the original beach fill were designed to protect against the 40-year storm event. EPA recommends that the Final Supplemental EIS provide a detailed discussion on whether this design event is still the optimal event to be utilized for design.
- 2) EPA recommends that the FSEIS provide a discussion on whether this protective berm design (that dates back to 1996) is still the optimal configuration based upon the performance during the numerous hurricanes that crossed or came within about 300 miles of the project area in 2004-2005 (Hurricanes Frances, Jeanne, Wilma, Katrina, Rita, Arlene, Dennis, Bonnie, Tammy, Ophelia, Ivan, Alex, and Gaston).

EPA's Summary Comments – The following issues should be resolved before the FSEIS is published:

- 1) The Florida State Historic Preservation Office (SHPO) has reportedly raised concerns about the potential for unidentified shipwreck sites within and adjacent to the proposed Martin County borrow sites. These wrecks could be impacted by sand-borrowing activities. EPA requests that the FSEIS include in the appendices any updated cultural assessment surveys, as well as all USACE correspondence with the State Archeologist and the SHPO. The SHPO's final concurrence letter for this project should be included either in the FSEIS or attached to the Record of Decision (ROD).
- 2) As mentioned previously, EPA recommends that all concerns raised by the FDEP on the proposed construction activities be documented as resolved in the FSEIS. Also, the FSEIS should demonstrate full compliance with all requirements of the Florida Coastal Management Program (FCMP). The proposed beach nourishment project is subject to the provisions of the Coastal Zone Management Act, and EPA recommends that USACE work closely with the State of Florida to fully evaluate the project for consistency with the goals and objectives of the act.
- 3) EPA supports the proposal to construct alternating traditional and turtle friendly segments so that monitoring may be implemented in a controlled environment to scientifically verify the performance of the turtle friendly template, without compromising storm damage reduction benefits. This effort is reportedly supported by FDEP, Martin County, and the U. S. Fish and Wildlife Service (USFWS) among others.

- 4) EPA supports the efforts by surrounding communities to study and identify new borrow sites for beach compatible sand as long as sites would be developed and utilized in a non-exclusive manner so other municipalities could also access the sites.
- 5) EPA supports USACE efforts to conduct future detailed evaluations on the potential for significant adverse effects from excavation of offshore shoals on shoreline and living marine resources. These evaluations should include an analysis of how removing sand from St. Lucie shoals in the future could alter the local wave climate and accelerate erosion that could affect EFH. EPA wants to ensure that excavation of offshore borrow areas and placement of fill in nearshore areas does not adversely affect hardbottom habitat, including corals and worm reefs colonized by *Phragmatopoma lapidosa*.
- 6) Any other issues raised by other state and federal protection agencies relevant to the proposed renourishment project should be documented as resolved or addressed in the FSEIS. EPA recommends that all requirements of the following be fully complied with for this project: the Endangered Species Act of 1973 (ESA) Section 7 consultation, the Magnuson-Stevens Fishery and Conservation Management Act Essential Fish Habitat consultation (Section 305), the National Historic Preservation Act (NHPA) Section 106 process, and the Coastal Zone Management Act Section 307 consistency determination.
- 7) As mentioned previously, EPA remains committed to ensuring that renourishment activities avoid, minimize, and mitigate for adverse effects during construction activities. EPA recommends that a robust monitoring program (for biological, sedimentation, and turbidity issues) be conducted during all phases of construction. EPA recommends that this comprehensive monitoring program be implemented to ensure protection of resources within and adjacent to the fill and borrow areas.

Summary - This DSEIS greatly expands our understanding of the overall impacts of the proposed project, and we appreciate the opportunity to comment on this well written and detailed document. EPA rates this action as "EC-2" (environmental concerns, more information is requested), that is, our review has identified environmental impacts that should be avoided to fully protect the environment, and that identified additional information, data, analyses or discussions should be included in the FSEIS. If we can be of further assistance in this matter, please contact Paul Gagliano, P.E. (404-562-9373) of my staff, who will serve as the initial point of contact regarding NEPA issues.

Sincerely,



Heinz J. Mueller, Chief
NEPA Program Office